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HEWLETT PACKARD COMPANY
P O BOX 272400, 3404 E. HARMONY ROAD
INTELLECTUAL PROPERTY ADMINISTRATION
FORT COLLINS, CO 80527-2400

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STACE, BRENT S	

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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/619,805
Filing Date: July 15, 2003
Appellant(s): CHERKASOVA, LUDMILA

Jody C. Bishop
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed September 11th, 2006 appealing from the Office action mailed June 9th, 2006.

(2) Related Appeals and Interferences

The following are the related appeals, interferences, and judicial proceedings known to the examiner which may be related to, directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal:

10/345,716

10/345,718

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

2004/0088380	Chung et al.	5-2004
6,477,583	Zayas et al.	11-2002

5,928,331 Bushmitch 7-1999

Blanton, Microsoft Computer Dictionary, 2002, Microsoft Press, Fifth Ed. p. 397 and p. 499

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 112

In light of the appellant's respective arguments or respective amendments, the previous 35 USC § 112 rejections to the claims have been withdrawn.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 3-16, 17, 19-22, 25, 26, and 28-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Application Publication No. 2004/0088380 (Chung et al.) in view of U.S. Patent No. 6,477,583 (Zayas et al.).

For **Claim 1**, Chung teaches: "A method comprising:

- partitioning a file into a plurality of subfiles; [Chung, paragraph [0016]]

- distributing the plurality of subfiles from a first node to a first group comprising a plurality of recipient nodes, wherein at least one subfile is distributed from the first node to each recipient node of said first group but no individual recipient node receives all of said plurality of subfiles; [Chung, paragraphs [0016]-[0017] with Chung, paragraph [0009]] and
- wherein at least one recipient node of said first group begins communicating a portion of its respective subfile that it is receiving from the first node to at least one other recipient node of said first group before the at least one recipient node fully receives its respective subfile" [Chung, paragraph [0016]]."

Chung discloses the above limitations but does not expressly teach:

- "exchanging subfiles among said plurality of recipient nodes of said first group such that each recipient node of said first group obtains all of said plurality of subfiles."

With respect to Claim 1, an analogous art, Zayas, teaches:

- "exchanging subfiles among said plurality of recipient nodes of said first group such that each recipient node of said first group obtains all of said plurality of subfiles" [Zayas col. 3, lines 35-39 with Chung, paragraphs [0016]-[0017] and Chung, paragraph [0021]].

It would have been obvious to one of ordinary skill in the art at the time of invention to combine Zayas with Chung because both inventions are directed towards file replication.

Zayas's invention would have been expected to successfully work well with Chung's invention because both inventions use computers connected over a network. Chung discloses the splitting and redundant storage on multiple servers comprising replicating subfiles across different servers on a network and the user downloading the different subfiles in parallel and simultaneously, however Chung does not expressly disclose that this operation is performed across all of the servers in the group of servers so that all the servers, much like the end user of Chung, has all of the subfiles. Zayas discloses an infrastructure for supporting file replications comprising a network of server computers replicating files.

It would have been obvious to one of ordinary skill in the art at the time of invention to take the network of server computers replicating files from Zayas and install it into the method of Chung, thereby offering the obvious advantage of having the servers in Chung's invention be the file replicating servers of Zayas's network of server computers so that bandwidth may be saved during transfers between servers and end users, and so that a higher degree of redundancy is achieved between the servers. Adding Zayas to Chung makes the servers of Chung replicate between each other.

Claim 3 can be mapped to Chung (as modified by Zayas) as follows: "The method of claim 1 wherein said partitioning comprises."

Chung (as modified by Zayas) discloses the above limitation but does not expressly teach:

- "partitioning said file into said plurality of subfiles corresponding in number to a number of said recipient nodes in said first group."

However, with respect to Claim 3, Chung (as modified by Zayas) teaches:

- "partitioning said file into said plurality of subfiles corresponding in number to a number of said recipient nodes in said first group" [Chung, paragraph [0032]].

Chung (as modified by Zayas) does not expressly teach "partitioning said file into said plurality of subfiles corresponding in number to a number of said recipient nodes in said first group," but, in the citation mapping above, Chung admits the number of subfiles is arbitrary in his invention. So, it is understood that the number of subfiles could correspond in number to a number of said recipient nodes in said first group. Chung clearly teaches that the number of subfiles in his invention can be greater or smaller than the exemplified number making the number of subfiles merely a design choice. Therefore, Chung's invention is further modified to have the file partitioned into subfiles corresponding in number to a number of said recipient nodes in said first group thereby offering the obvious advantage of promoting an equal distribution of computer resources (the file).

Claim 4 can be mapped to Chung (as modified by Zayas) as follows: "The method of claim 1 wherein said partitioning further comprises:

- partitioning said file into said plurality of subfiles that are each approximately equal in size" [Chung, paragraph [0032]].

Claim 5 can be mapped to Chung (as modified by Zayas) as follows: "The method of claim 1 further comprising:

- determining a number of said recipient nodes to include in said first group" [Chung, paragraph [0033]].

Claim 6 can be mapped to Chung (as modified by Zayas) as follows: "The method of claim 5 wherein said determining comprises:

- determining a suitable number of concurrent communication connections that can be used for communication of information between one of the nodes and a plurality of the other nodes; [Chung, paragraph [0033] with Chung, paragraphs [0016]-[0017]] and
- determining said number of recipient nodes to include in said first group as corresponding in number to said number of concurrent communication connections" [Chung, paragraph [0033]].

Claim 7 can be mapped to Chung (as modified by Zayas) as follows: "The method of claim 1 wherein said distributing comprises:

- distributing the plurality of subfiles to said plurality of recipient nodes of said first group concurrently" [Chung, paragraphs [0016]-[0017]].

Claim 8 can be mapped to Chung (as modified by Zayas) as follows: "The method of claim 1 wherein exchanging subfiles among said plurality of recipient nodes of said first group further comprises:

- each of said plurality of recipient nodes establishing concurrent communication connections to every other recipient node of said first group" [Chung, paragraphs [0016]-[0017] with Chung, paragraph [0033]].

Claim 9 can be mapped to Chung (as modified by Zayas) as follows: "The method of claim 1 wherein said first node and said plurality of recipient nodes of said

first group each comprise a server computer" [Zayas, col. 3, lines 35-39 with Chung, paragraphs [0016]-[0017]].

Claim 10 can be mapped to Chung (as modified by Zayas) as follows: "The method of claim 9 wherein said first node and said plurality of recipient nodes are distributed server computers in a Content Distribution Network (CDN)" [Chung, paragraph [0031]].

Claim 11 can be mapped to Chung (as modified by Zayas) as follows: "The method of claim 1 further comprising:

- said first group of recipient nodes communicating said file to a second group comprising a plurality of recipient nodes" [Zayas col. 3, lines 35-39 with Chung, paragraphs [0016]-[0017] and Chung, paragraph [0021]].

Claim 12 can be mapped to Chung (as modified by Zayas) as follows: "The method of claim 11 further comprising:

- each recipient node of said first group communicating a subfile to every recipient node of said second group such that said recipient nodes of said second group each receive all of said plurality of subfiles" [Zayas col. 3, lines 35-39 with Chung, paragraphs [0016]-[0017] and Chung, paragraph [0021]].

Claim 13 can be mapped to Chung (as modified by Zayas) as follows: "The method of claim 11 further comprising:

- each recipient node of said first group communicating the subfile that it receives from said first node to at least one node of the second group" [Zayas col. 3, lines 35-39 with Chung, paragraphs [0016]-[0017] and Chung, paragraph [0021]].

Claim 14 can be mapped to Chung (as modified by Zayas) as follows: "The method of claim 13 wherein each recipient node of said first group begins communicating the subfile that it is receiving from said first node to said at least one node of the second group before fully receiving the subfile from the first node" [Zayas col. 3, lines 35-39 with Chung, paragraphs [0016]-[0017] and Chung, paragraph [0021]].

Claim 15 can be mapped to Chung (as modified by Zayas) as follows: "The method of claim 1 further comprising:

- logically organizing a plurality of groups of recipient nodes into a primary multicast tree, [Zayas col. 3, lines 35-39 with Chung, paragraphs [0016]-[0017] and Chung, paragraph [0021]] wherein the groups of the primary multicast tree are logically organized sequentially such that intermediate groups of the primary multicast tree each communicate the file to a next sequential group of the primary multicast tree and wherein each intermediate group begins to communicate the file to a next sequential group of the primary multicast tree before fully receiving the file from a preceding group of the primary multicast tree" [Zayas col. 3, lines 35-39 with Chung, paragraphs [0016]-[0017] and Chung, paragraph [0021]].

Claim 16 can be mapped to Chung (as modified by Zayas) as follows: "The method of claim 15 further comprising:

- further logically organizing a plurality of groups of recipient nodes into a secondary multicast tree, [Zayas col. 3, lines 35-39 with Chung, paragraphs [0016]-[0017] and Chung, paragraph [0021]] wherein at least one group of the

primary multicast tree begins communicating the file to at least one group of the secondary multicast tree after the group of the primary multicast tree has fully received the file" [Zayas col. 3, lines 35-39 with Chung, paragraphs [0016]-[0017] and Chung, paragraph [0021]].

Claims 17 and 19-22 encompass substantially the same scope of the invention as that of Claims 1, 3, 7, 11, and 14, respectfully, in addition to a system and some means for performing the method steps of Claims 1, 3, 7, 11, and 14, respectfully. Therefore, Claims 17 and 19-22 are rejected for the same reasons as stated above with respect to Claims 1, 3, 7, 11, and 14, respectfully.

Claims 25, 26 and 28-31 encompass substantially the same scope of the invention as that of Claims 1,1, 7, 8, 11, and 14, respectfully, in addition to a method and some steps for performing the method steps of Claims 1,1, 7, 8, 11, and 14, respectfully. Therefore, Claims 25, 26, and 28-31 are rejected for the same reasons as stated above with respect to Claims 1,1, 7, 8, 11, and 14, respectfully.

Claims 2, 18, 23, 24, 27, and 32-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Application Publication No. 2004/0088380 (Chung et al.) in view of U.S. Patent No. 6,477,583 (Zayas et al.), further in view of U.S. Patent No. 5,928,331 (Bushmitch).

For **Claim 2**, Chung (as modified by Zayas) teaches: "The method of claim 1 wherein said distributing comprising."

Chung (as modified by Zayas) discloses the above limitation but does not expressly teach:

- "distributing from the first node a different subfile to each of said recipient nodes of said first group."

With respect to Claim 2, an analogous art, Bushmitch, teaches:

- "distributing from the first node a different subfile to each of said recipient nodes of said first group" [Bushmitch, col. 4, lines 1-10 with Bushmitch, Fig. 2].

It would have been obvious to one of ordinary skill in the art at the time of invention to combine Bushmitch with Chung (as modified by Zayas) because both inventions are directed towards multicasting files.

Bushmitch's invention would have been expected to successfully work well with Chung (as modified by Zayas)'s invention because both inventions use computers connected through a network. Chung (as modified by Zayas) discloses a the splitting and redundant storage on multiple servers comprising file replication across servers, however Chung (as modified by Zayas) does not expressly disclose distributing a different subfile to each of said recipient nodes. Bushmitch discloses a distributed internet protocol-based real-time multimedia streaming architecture comprising the distribution of a different subfile to each of said recipient nodes.

It would have been obvious to one of ordinary skill in the art at the time of invention to take the distribution architecture from Bushmitch and install it into the method of Chung (as modified by Zayas), thereby offering the obvious advantage of

increasing the parallel transmissions of Chung (as modified by Zayas) during distribution and end user downloading.

Claim 18 encompasses substantially the same scope of the invention as that of Claim 2, in addition to a system and some means for performing the method steps of Claim 2. Therefore, Claim 18 is rejected for the same reasons as stated above with respect to Claim 2.

For **Claim 23**, Chung teaches: "A system [Chung, paragraph [0028]] comprising:

- an origin node operable to partition a file into a plurality of subfiles, [Chung, paragraph [0016]] wherein said plurality of subfiles correspond in number to a number of recipient nodes in a first group to which said file is to be distributed; [Chung, paragraph [0032]]
- said origin node operable to distribute all of said plurality of subfiles to said recipient nodes, [Chung, paragraphs [0016]-[0017] with Chung, paragraph [0009]] and
- wherein at least one recipient node is operable to begin communicating a portion of its respective subfile that it is receiving from the origin node to at least one other recipient node before the at least one recipient node fully receives its respective subfile from the origin node" [Chung, paragraph [0016]].

Since Chung admits the number of subfiles is arbitrary in his invention, it is understood that the number of subfiles could correspond in number to a number of said recipient nodes in said first group. Chung clearly teaches that the number of subfiles in his invention can be greater or smaller than the exemplified number, and is merely a

design choice. Therefore, Chung's invention is modified to have the file partitioned into subfiles corresponding in number to a number of said recipient nodes in said first group thereby offering the obvious advantage of promoting an equal distribution of computer resources (the file).

Chung discloses the above limitations but does not expressly teach:

- "wherein a different subfile is distributed from said origin node to each of said recipient nodes; and
- said recipient nodes operable to exchange their respective subfiles received from said origin node such that each recipient node obtains all of said plurality of subfiles."

With respect to Claim 23, an analogous art, Zayas, teaches:

- "said recipient nodes operable to exchange their respective subfiles received from said origin node such that each recipient node obtains all of said plurality of subfiles" [Zayas col. 3, lines 35-39 with Chung, paragraphs [0016]-[0017] and Chung, paragraph [0021]].

With respect to Claim 23, an analogous art, Bushmitch, teaches:

- "wherein a different subfile is distributed from said origin node to each of said recipient nodes; [Bushmitch, col. 4, lines 1-10 with Bushmitch, Fig. 2]

It would have been obvious to one of ordinary skill in the art at the time of invention to combine Zayas and Bushmitch with Chung because the inventions are directed towards networking computers together for file replication or multicasting.

Zayas's and Bushmitch's invention would have been expected to successfully work well with Chung's invention because the inventions use computer networks. Chung discloses the splitting and redundant storage on multiple servers comprising replicating subfiles across different servers on a network and the user downloading the different subfiles in parallel and simultaneously, however Chung does not expressly disclose that this operation is performed across all of the servers in the group of servers so that all the servers, much like the end user of Chung, has all of the subfiles or distributing a different subfile to each of said recipient nodes. Zayas discloses an infrastructure for supporting file replications comprising a network of server computers replicating files. Bushmitch discloses a distributed internet protocol-based real-time multimedia streaming architecture comprising the distribution of a different subfile to each of said recipient nodes.

It would have been obvious to one of ordinary skill in the art at the time of invention to take the network of server computers replicating files from Zayas and the distribution architecture from Bushmitch and install them into the system of Chung, thereby offering the obvious advantage of having the servers in Chung's invention be the file replicating servers of Zayas's network of server computers so that bandwidth may be saved during transfers between servers and end users, and so that a higher degree of redundancy is achieved between the servers. Adding Zayas to Chung makes the servers of Chung replicate between each other. Bushmitch offers the obvious advantage of increasing the parallel transmissions of Chung (as modified by Zayas) during distribution and end user downloading.

Claim 24 can be mapped to Chung (as modified by Zayas and Bushmitch) as follows: "The system of claim 23 wherein the origin node is operable to distribute the plurality of subfiles to said number of recipient nodes of said first group concurrently" [Chung, paragraphs [0016]-[0017]].

Claim 27 encompasses substantially the same scope of the invention as that of Claim 2, in addition to a method and some steps for performing the method steps of Claim 2. Therefore, Claim 27 is rejected for the same reasons as stated above with respect to Claim 2.

For **Claim 32**, Chung teaches: "A method comprising:

- distributing a plurality of descriptors of a file from a first node to a first group comprising a plurality of recipient nodes, wherein at least one descriptor is distributed from the first node to each recipient node of said first group but not all of said plurality of descriptors are distributed from the first node to any of the recipient nodes of said first group; and
- wherein at least one recipient node of said first group begins communicating a portion of its respective descriptor that it is receiving from the first node to at least one other recipient node of said first group before the at least one recipient node fully receives its respective descriptor from the first node" [Chung, paragraph [0016]].

Chung discloses the above limitations but does not expressly teach:

- "encoded with multiple description coding (MDC)

- said plurality of recipient nodes of said first group exchanging their respective descriptors such that each recipient node of said first group obtains all of said plurality of descriptors"

With respect to Claim 32, an analogous art, Zayas, teaches:

- "said plurality of recipient nodes of said first group exchanging their respective descriptors such that each recipient node of said first group obtains all of said plurality of descriptors [Zayas col. 3, lines 35-39 with Chung, paragraphs [0016]-[0017] and Chung, paragraph [0021]].

With respect to Claim 32, an analogous art, Bushmitch, teaches:

- "encoded with multiple description coding (MDC)" [Bushmitch, col. 3, lines 31-46].

It would have been obvious to one of ordinary skill in the art at the time of invention to combine Zayas and Bushmitch with Chung because the inventions are directed towards networking computers together for file replication or multicasting.

Zayas's and Bushmitch's invention would have been expected to successfully work well with Chung's invention because the inventions use computer networks. Chung discloses the splitting and redundant storage on multiple servers comprising replicating subfiles across different servers on a network and the user downloading the different subfiles in parallel and simultaneously, however Chung does not expressly disclose that this operation is performed across all of the servers in the group of servers so that all the servers, much like the end user of Chung, has all of the subfiles or that MDC is used. Zayas discloses an infrastructure for supporting file replications

comprising a network of server computers replicating files. Bushmitch discloses a distributed internet protocol-based real-time multimedia streaming architecture comprising the use of MDC.

It would have been obvious to one of ordinary skill in the art at the time of invention to take the network of server computers replicating files from Zayas and MDC from Bushmitch and install them into the system of Chung, thereby offering the obvious advantage of having the servers in Chung's invention be the file replicating servers of Zayas's network of server computers so that bandwidth may be saved during transfers between servers and end users, and so that a higher degree of redundancy is achieved between the servers. Adding Zayas to Chung makes the servers of Chung replicate between each other. Bushmitch offers the obvious advantage of providing a high quality of service and make the invention work with existing real time data transport.

Claim 33 can be mapped to Chung (as modified by Zayas and Bushmitch) as follows: "The method of claim 32 wherein said distributing comprising:

- distributing from the first node a different descriptor to each of said recipient nodes of said first group" [Bushmitch, col. 4, lines 1-10 with Bushmitch, Fig. 2].

Chung (as modified by Zayas and Bushmitch) discloses a the splitting and redundant storage on multiple servers comprising file replication across servers, however Chung (as modified by Zayas and Bushmitch) does not expressly disclose distributing a different subfile to each of said recipient nodes. Bushmitch discloses a distributed internet protocol-based real-time multimedia streaming architecture comprising the distribution of a different subfile to each of said recipient nodes.

It would have been obvious to one of ordinary skill in the art at the time of invention to take the distribution architecture from Bushmitch and install it into the method of Chung (as modified by Zayas and Bushmitch), thereby offering the obvious advantage of increasing the parallel transmissions of Chung (as modified by Zayas and Bushmitch) during distribution and end user downloading. This further modifies the previous combination of Chung (as modified by Zayas and Bushmitch).

Claim 34 can be mapped to Chung (as modified by Zayas and Bushmitch) as follows: "The method of claim 32 wherein said distributing comprises:

- distributing the plurality of descriptors to said plurality of recipient nodes of said first group concurrently" [Chung, paragraphs [0016]-[0017]].

(10) Response to Argument

As to the appellant's arguments with respect to exemplary Claim 1 (including Claims 17 and 25) for the prior art(s) allegedly not teaching or suggesting "exchanging subfiles among said plurality of recipients nodes of said first group such that each recipient node of said first group obtains all of said plurality of subfiles, wherein at least one recipient node of said first group begins communicating a portion of its respective subfile that it is receiving from the first node to at least one other recipient node of said first group before the at least one recipient node fully receives its respective subfile" the examiner respectfully disagrees.

First, of the above limitations, "exchanging subfiles among said plurality of recipient nodes of said first group such that each recipient node of said first group

obtains all of said plurality of subfiles" was originally shown as being taught primarily by Zayas; specifically, Zayas col. 3, lines 35-39 (with Chung, paragraphs [0016]-[0017] and Chung, paragraph [0021]). Since subfiles must be files themselves (also stated in Chung, paragraph [0016], the nature that "subfile" includes the word "file," and considering that they are on file systems), "files" in the cited portion of the Zayas reference was combined with Chung to mean that files or subfiles are exchanged. Chung does not teach that every node in the first group gets all of the subfiles of a file, however, Zayas teaches replicating all of the files/subfiles on a volume between servers (further evidence in the paragraph below). When the two references, Chung and Zayas, are combined, this limitation is obvious. Combining the references like this offers the obvious advantage of having the servers in Chung's invention be the file replicating servers of Zayas's network of server computers so that bandwidth may be saved (Chung paragraph [0017]) during transfers between servers and (also, coincidentally) end users, and so that a higher degree of redundancy is achieved between the servers (to one of ordinary skill in the art a higher degree of redundancy offers the obvious advantage of the system being more reliable. In the event that a server fails other server(s) have copies) see also (Chung paragraph [0017]). Adding Zayas to Chung makes the servers of Chung replicate between each other. Since Zayas teaches that volumes of files are replicated on a different set of servers, this teaches teaches "each recipient node of said first group obtains all of said plurality of subfiles." How the references were specifically combined and why the combination is proper below further aids the teaching of this limitation. As for the "first group" in the claimed limitations, a

first group can be obtained from Chung, for example, any one or multiple servers A-D in Fig. 6. As will be explained further later, with respect to exemplary Claim 14's arguments, Chung defines a service center (group) as being one or more servers. Therefore, any one or multiple servers A-D in Fig. 6 is the first group.

In response to appellant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Next, of the above limitations, "wherein at least one recipient node of said first group begins communicating a portion of its respective subfile that it is receiving from the first node to at least one other recipient node of said first group before the at least one recipient node fully receives its respective subfile" was originally shown as being taught primarily by Chung; specifically, Chung, paragraph [0016]. This paragraph teaches that a user can receive data in a *streaming* fashion, in *parallel* and *simultaneously* from one or more servers. Chung also states that the invention is on a peer-to-peer network (Chung, paragraph [0021]) that ties into the present limitation by the "wherein" word of the presently claimed limitation (additionally, the use of the word "wherein" will automatically include the combination established above since "wherein" is further specifying the exchanging limitation). In a peer-to-peer network, by definition, client computers also act as servers (See Blanton, Microsoft Computer Dictionary, 2002, Microsoft Press, Fifth Ed. p. 397 "peer-to-peer network" or alternatively, "peer-to-

peer architecture" as evidence of this well-known definition). Therefore, the fact that Chung teaches that a user receives data is construed to being a server receiving data since servers and clients are the same in a peer-to-peer network. It is well known to one of ordinary skill in the art that the role of server or client in a peer-to-peer network changes based upon what node is serving what other node and the direction of the flow of data (as at least partially evidenced by the above definition). Also, the Zayas reference teaches that data is transmitted between servers (Zayas col. 3, lines 35-39), therefore, using the combination established above for this claim, "servers," as identified in an embodiment in Chung (Fig. 6 (front page)), the servers A-D of Chung (Fig. 6 (front page)) "receive data in a *streaming* fashion, in *parallel* and *simultaneously* from one or more servers." Additionally, since Chung transfers in a streaming fashion, streaming by definition is transmitting data in real time and delivering information in a steady flow that the recipient can access the file being transmitted (See Blanton, Microsoft Computer Dictionary, 2002, Microsoft Press, Fifth Ed. p. 499 "streaming" as evidence of this well-known definition). A recipient/server accessing a file as it is being transmitted and considering that data is transmitted in parallel and simultaneously from one or more servers is "communicating a portion of its respective subfile that it is receiving from the first node to at least one other recipient node of said first group before the at least one recipient node fully receives its respective subfile." Therefore, with the subfiles going to a first user/server in Chung from a first user/server request, a second user/server request from a second user/server will be served from the first user/server since the definition of streaming and peer-to-peer enable the first user/server to act as a server

serving data in real time (as it is being received). In fact, as further evidence of this in Chung, Chung, makes reservations incase data cannot be received/streamed fast enough or at all from a server/user in Chung, paragraph [0017]. It should be noted that the claim is broad in the sense that the claim only recites "recipient node" instead of "a end user" or "a server node." These limitations based on the broad language of "recipient node" (a computer node receiving data) help the validity of the combination and the teaching of the references.

As to the combination of Chung and Zayas, Chung does not teach away from the proposed combination. Chung merely gives notice to the reader that replicating full files across all the servers would be expensive for disk storage and wastefully in terms of input/output bandwidth. Chung does not teach that replicating full files across all the servers cannot be used in Chung's invention. Additionally, Chung teaches in paragraph [0017] that replication provides redundancy and disk input/output preservation. Replicating full files (as subfiles, as combined) across all the servers in Chung provides increased redundancy and increased disk input/output only making the combined invention better. Syntex (U.S.A.) LLC v. Apotex Inc., 74 USPQ2d 1823 (Fed. Cir. 2005) states "Under the proper legal standard, a reference will teach away when it suggests that the developments flowing from its disclosures are unlikely to produce the objective of the appellant's invention. In re Gurley, 27 F.3d 551, 553 [31 USPQ2d 1130] (Fed. Cir. 1994). A statement that a particular combination is not a preferred embodiment does not teach away absent clear discouragement of that combination. In re Fulton, 391 F.3d at 1199-1200."

In response to appellant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, motivation to combine the references is found in the references themselves. Subfiles must be files themselves (also stated in from Chung, paragraph [0016]). Zayas's "files," when combined with Chung, is Chung's files and subfiles. Chung's invention speeds up the delivery of data by receiving data (as subfiles) from multiple servers instead of the traditional method of receiving the full file from one server (Chung, paragraph [0017]). Chung, paragraph [0017] also provides for each subfile residing on more than one server (which encompasses all the servers) so that if a server is slow or unavailable, the redundancy in place will still enable a speedy delivery of data from another available server. When all the subfiles reside on all the servers, this effectively is replicating the full file across all the servers. Zayas explicitly replicates volumes of files/subfiles to all servers. Additionally, Chung implies that the subfiles (and hence full files) can be distributed across all servers in Chung, paragraph [0033] where it states "It is understood that the sub-files may be distributed to a fewer or greater number of servers." Zayas and Chung are analogous art because they both deal with replicating files. Evidence of this proper combination is also shown above.

As to the appellant's arguments with respect to exemplary Claim 3 (including Claims 19 and part of 23) for the prior art(s) allegedly not teaching or suggesting "partitioning said file into said plurality of subfiles corresponding in number to said recipient nodes in said first group," the examiner respectfully disagrees. Chung, paragraph [0032] is cited in teaching this limitation. This argument has not been previously submitted to the examiner, as such, this argument is a new argument included in the appellant's appeal brief.

First, Chung (as modified by Zayas) does not explicitly teach "partitioning said file into said plurality of subfiles corresponding in number to a number of said recipient nodes in said first group," but, in the citation mapping above, Chung admits the number of subfiles is arbitrary in his invention. So, it is understood that the number of subfiles could correspond in number to a number of said recipient nodes in said first group. Chung clearly teaches that the number of subfiles in his invention can be greater or smaller than the exemplified number making the number of subfiles merely a design choice in Chung. Therefore, Chung's invention is further modified to have the file partitioned into subfiles corresponding in number to a number of said recipient nodes in said first group thereby offering the obvious advantage of promoting an equal distribution of computer resources (the files) (as can be generally see in Chung, Figs. 4 or 6). Additionally, since the MPEP at 2125 teaches that drawings alone can be used as prior art, Chung alone is seen as teaching at least a relative equal distribution of subfiles. When the combination is considered, each server stores all the subfiles

making an exact equal distribution of the files. Part of MPEP at 2125 is cited here for further evidence:

> "The origin of the drawing is immaterial. For instance, drawings in a design patent can anticipate or make obvious the claimed invention as can drawings in utility patents. When the reference is a utility patent, it does not matter that the feature shown is unintended or unexplained in the specification. The drawings must be evaluated for what they reasonably disclose and suggest to one of ordinary skill in the art. In re Aslanian, 590 F.2d 911, 200 USPQ 500 (CCPA 1979)."

Also, in considering the drawings (Figs. 3-5) and functionality in Chung, each server in Chung is shown is having at least a subfile (labeled with the format "S#"). For example subfile S1 is seen as being stored on servers A-C, but not server D. Fig. 4 shows that Chung determines the number (and size) that the file should be partitioned into (step 520 and 530) and it determines how the subfiles should be distributed to the servers (step 560). Fig. 3 shows the original file partitioned into 4 subfiles. There are also 4 servers as seen in Figs. 4 and 5. So, as seen from the Figures, 4 subfiles is a direct correspondence to the 4 servers. MPEP at 2125 teaches that drawings alone can be used as prior art (see above).

As to the appellant's arguments with respect to Claim 6 for the prior art(s) allegedly not teaching or suggesting "determining a suitable number of concurrent communication connections that can be used for communication of information between one of the nodes and a plurality of the other nodes; and determining said number of recipient nodes to include in said first group as corresponding in number to said number of concurrent communication connections," the examiner respectfully disagrees. This

argument has not been previously submitted to the examiner, as such, this argument is a new argument included in the appellant's appeal brief.

For the "determining a suitable number of concurrent communication connections that can be used for communication of information between one of the nodes and a plurality of the other nodes" limitation, Chung, paragraph [0033] with Chung, paragraphs [0016]-[0017] were used in the rejection, however the combination of Chung with Zayas also must be considered (as mapped in the indep. claim that this claim depends from). As identified by the appellant, Chung at paragraph [0033] teaches that each subfile (and file as shown above) is transmitted over a separate communication link to a receiver. The combination of the references above makes the servers of Chung transmit data to each other in replicating files/subfiles. Also cited in the rejection, Chung, paragraphs [0016]-[0017], chung teaches that subfiles are transmitted via a streaming setup in parallel and simultaneously. When files/subfiles are streamed from server to server in parallel and simultaneously, this is concurrent communication. As for determining a suitable number of these concurrent communications, this is seen, for example, as being taught in Chung, Fig. 5, step 570 (distribute and store subfiles on servers) or in a basic sense, Chung, paragraph [0033] with the combination with Zayas. Chung, distributes the files/subfiles to the servers. How many servers there are that need the file determines the number of concurrent communication links/connections created.

For the "determining said number of recipient nodes to include in said first group as corresponding in number to said number of concurrent communication connections" limitation, Chung, paragraph [0033] was used in the rejection, however the combination

of Chung with Zayas also must be considered (as mapped in the indep. claim that this claim depends from). As stated above with respect to exemplary Claim 1 arguments, a "first group" can be obtained from Chung, for example, any one or multiple servers A-D in Fig. 6. As will be explained further later, with respect to exemplary Claim 14 arguments, Chung defines a service center (group) as being one or more servers. Therefore, any one or multiple servers A-D in Fig. 6 is the first group. Chung, in paragraph [0033] teaches that for every subfile transmitted, a separate communication link is made. Therefore, for each server receiving a subfile, a separate communication link is made for every subfile going to the receiving server. It is easily seen from this teaching that many communication links are made depending on the number of subfiles and the number of recipient servers for any given server group.

As to the appellant's arguments with respect to exemplary Claim 7 (including Claims 20 and 28) for the prior art(s) allegedly not teaching or suggesting "distributing a plurality of subfiles to a plurality of recipient nodes concurrently" because "[i]nstead Chung teaches that subfiles are distributed to recipient servers, but fails to teach or suggest that the subfiles are distributed to the plurality of recipient servers concurrently" the examiner respectfully disagrees. This argument has not been previously submitted to the examiner, as such, this argument is a new argument included in the appellant's appeal brief. This argument has been met by the above arguments. In summary of the above arguments, the combination of Chung and Zayas make the servers of Chung replicate files as subfiles to each other. Since Chung is on a peer-to-peer network, the users in Chung receiving the files are also the servers in Chung making the files/subfiles

being communicated in a streaming fashion simultaneously and in parallel/concurrently to each server/recipient node.

As to the appellant's arguments with respect to exemplary Claim 8 (including Claim 29) for the prior art(s) allegedly not teaching or suggesting "each of said plurality of recipient nodes establishing concurrent communication connections to every other recipient node of said first group," the examiner respectfully disagrees. This argument has not been previously submitted to the examiner, as such, this argument is a new argument included in the appellant's appeal brief. It is believed that the arguments above exemplify how the prior arts teach this claim. In summary of the above arguments, the combination of Chung and Zayas make the servers of Chung replicate files as subfiles to each other. Since Chung is on a peer-to-peer network, the users in Chung receiving the files are also the servers in Chung making the files/subfiles being communicated in a streaming connection simultaneously and in parallel/concurrently to each server/recipient node.

As to the appellant's arguments with respect to exemplary Claim 14 (including Claims 22 and 31) for the prior art(s) allegedly not teaching or suggesting "wherein each recipient node of said first group begins communicating the subfile that it is receiving from said first[/origin] node to said at least one node of the second group before fully receiving the subfile from the first[/origin] node," the examiner respectfully disagrees. This argument has not been previously submitted to the examiner, as such, this argument is a new argument included in the appellant's appeal brief.

First, as to the minor differences between, for example, Claims 14 and 22 (the use of the words "origin node" instead of "first node"), this is a matter of claim interpretation where the claims can and are interpreted the same since they claim substantially the same subject matter. Therefore, the claims with this substantially the same language in it can be grouped together under these same arguments.

Second, in showing that the prior arts teach this claim, both "groups" (e.g. first group and second group) need to be established. The groups are established in the prior arts. In the cited sections of Chung, paragraphs [0016]-[0017] and Chung, paragraph [0021], Chung teaches that servers exist and store subfiles. Chung is shown especially in Chung, Fig. 1 and Chung, paragraphs, [0019]-[0020] that Chung has groups of servers in that "...there may be more than one service center 12, each having one or more servers" where each service center (or server(s) as taught by the drawing) is/are connected to network 30. The cited portion of Zayas col. 3, lines 35-39 also teaches server groups by teaching "In general, each file system 205A, 205B, and 205C stores several volumes of files, each of which can be replicated on a different set of file servers" (emphasis added). Since each service center in Chung is at least a server (by Chung's definition), every server grouped by service center exchanges files (by the combination with Zayas). Since Chung teaches at least one other group/service center (potentially any number of groups/service centers) this establishes at least a second group from Chung and alternatively Zayas where each server in any group exchanges subfiles with any other server in any other group (as obtained from the combination of the references).

Last, since Chung (as modified by Zayas) transmits files to the other servers in a streaming fashion in parallel and simultaneously (as further shown above), this teaches "wherein each recipient node of said first group begins communicating the subfile that it is receiving from said first node to said at least one node of the second group before fully receiving the subfile from the first node" especially since a streaming fashion in parallel and simultaneously is "...receiving from said first node to said at least one node of the second group before fully receiving the subfile from the first node" as further shown above with similar arguments with respect to Claim 1.

As to the appellant's arguments with respect to Claim 15 for the prior art(s) allegedly not teaching or suggesting "logically organizing a plurality of groups of recipient nodes into a primary multicast tree," the examiner respectfully disagrees. This argument has not been previously submitted to the examiner, as such, this argument is a new argument included in the appellant's appeal brief. The appellant only submitted that this claim is allegedly allowable for reasons directly related to the rejections on Claim 1 (contradicting appellant's statement in the Appeal Brief, page 8, "The claims do not stand or fall together"). Since Claim 1 has been shown as being taught by the prior art(s), this argument has no weight. However, if an independent argument was submitted, the combined prior art(s) would still teach this limitation since, in summary, how the references were combined "logically organizes" groups of nodes into "primary multicast" trees. Multicast in the art means single sender, many selected receivers (see appellant's own Fig. 5 for an example). How the prior arts are combined and communicates files/subfiles performs as a tree.

As to the appellant's arguments alleging that there is insufficient motivation to combine the references (Chung and Zayas) in the manner applied by the examiner, the examiner respectfully disagrees. This argument has been met earlier in this document.

As to the appellant's arguments with respect to Claim 23 for the prior art(s) allegedly not teaching or suggesting "said origin node operable to distribute all of said plurality of subfiles to said recipient nodes, wherein a different subfile is distributed from said origin node to each of said recipient nodes," the examiner respectfully disagrees. The emphasized limitation (underlined above) was originally shown as being taught primarily by Bushmitch; specifically Bushmitch, col. 4, lines 1-10 with Bushmitch, Fig. 2. Since drawings of prior art can alone be used as prior art as shown above and in relation to MPEP 2125, Bushmitch clearly shows in Fig. 2 that nodes 12a-12e have all each received different substreams/subfiles (as combined) (X_1-X_8) of stream/file X. Bushmitch also teaches that substreams/subfiles (e.g. Y_1 and Y_2) can be sent to multiple computers wherein the same subfile is sent to more than one computer. The fact that Bushmitch teaches more than the claim, however, is immaterial.

Other arguments with respect to Claim 23 have already been met by the above arguments with respect to Claims 1, 3, and 14 since the language in Claim 23 is substantially the same as Claims 1, 3, and 14.

As to the appellant's arguments with respect to Claim 32 for the prior art(s) allegedly not teaching or suggesting "wherein at least one recipient node of said first group begins communicating a portion of its respective descriptor that it is receiving from the first node to at least one other recipient node of said first group before the at

least one recipient node fully receives its respective descriptor from the first node," the examiner respectfully disagrees. This limitation is substantially the same as the limitation argued above with respect to Claim 1 except that "subfile" from Claim 1 is replaced with "descriptor" since the claim defines that a "file is encoded with multiple description coding (MDC)." Bushmitch, col. 3, lines 31-46 teaches using MDC to encode files (also considering Bushmitch, col. 3, lines 26-31 "file system" storing stream component data). Therefore, even though "files" from "files encoded with multiple description coding (MDC)" was shown as being taught in two different prior arts, easily one prior art (Bushmitch) can teach that limitation alone. However, "files[/subfiles]" from "files encoded with multiple description coding (MDC)" limitation was shown as being taught in Chung, paragraph [0016], since there Chung teaches partitioning a file into subfiles and distributing them to servers. As such, the "streams," "signals," "substreams," or "subsignals" of Bushmitch are considered to be files or subfiles themselves (either considering Bushmitch alone or in combination with Chung). Additional support for this can be found in Bushmitch, col. 4, lines 17-22. It was previously shown above that subfile are files themselves by their very nature. Claim 23 also defines "descriptors" as being a file(and hence subfile) encoded with MDC. Since Claim 23's streams/signals/descriptors and substreams/subsignals/descriptors are equivalent to Claim 1's files and subfiles, the response to the arguments regarding Claim 1 can be used in response to Claim 23's arguments. Bushmitch is shown as teaching descriptors made from files where the descriptors can be files or subfiles.

As to the appellant's arguments alleging that there is insufficient motivation to combine the references (Chung, Zayas, and Bushmitch) in the manner applied by the examiner, the examiner respectfully disagrees. Appellant's argument that there is insufficient motivation for the combination of Chung, Zayas, and Bushmitch rests on the appellant's previous argument that there is allegedly insufficient motivation for the combination of Chung with Zayas. Since this has been shown above, this argument is rendered moot.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Brent Stace

Conferees:

Jeffrey Gaffin

Hosain Alam